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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 August 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-38</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,2,4-8,10-20 and 25-38</u> is/are rejected.

7)☒ Claim(s) <u>3,9 and 21-24</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/21/07 has been entered.

Claims 1-38 were examined and are pending. Note that with respect to the current application, in making a determination of the level of skill of a person of ordinary skill in the art, it is believed that a person of ordinary skill in the art at the time applicant's invention was made is someone having a BS in Mechanical or Electrical Engineering and is familiar with switching technology and has at least a basic understanding of signal encoding/encryption (or someone with equivalent industry experience).

Claim Objections

Claims 3, 9, and 21 are objected to because of the following informalities:

1. In claim 3, "the identifier" recited in line 14 should be "the terminal number" so as to be consistent with what is recited in line 12. Further, "a number of each terminal" in line in line 26 should be "each terminal number" and "the number of a terminal" in lines 28 and 30 should be "the terminal number".

2. Similar corrections as claim 3 should be made to claims 9 and 21.

3. Appropriate correction is required.

Response to Arguments

Applicant's arguments with respect to the amended claims were fully considered.

With respect to claim 1, applicant argues that the amended claim overcomes the

combined teachings of Beasley, AAPA, and Rothenberg because the identification

processing done by Rothenberg uses the IP address as an encryption key while the

claim recites that identification processing utilizes an identifier corresponding to a   .

connector through which the at least one terminal is connected. Applicant states that

because an IP address is not related to the physical connection to a network, the

address type taught by Rothenberg does not teach the connector as in claim 1. This

argument was not persuasive because while Rothenberg does teach use of his

invention in an Ethernet-type network, thus the address used as a key would be an IP

address, one skilled in the art having common sense and ordinary creativity would have

been able to adapt Rothenberg's teachings within Beasley and AAPA's switching

network such that the identifier used in Beasley and AAPA's switching network was

utilized as a cryptographic key. Column 6, lines 42-49 of Beasley reveals that his

switching network's connectors, i.e. switch cards, each have a unique address. In the

context of the combined teachings of Beasley, AAPA, and Rothenberg, it would have

been obvious to one of ordinary skill in the art to utilize the identifier/address of the

connectors, i.e. switch cards, taught by Beasley as cryptographic keys.

With respect to claim 2, applicant argues that Rothenberg fails to teach a second

deciphering unit. This is not found persuasive because the rejection of claim 2 is not

based on Rothenberg alone and obviousness of the claim should be determined based on the combination teachings of Beasley, AAPA, and Rothenberg, not just Rothenberg alone. Rothenberg shows each computer in Figure 1 having its own decryptor 12, thus when viewed in context along with what has been taught by Beasley and AAPA, it would have been obvious to have each computer in the switching network have its own deciphering unit. Since there are multiple computers, i.e. a private computer for each terminal and a shared computer, in the combination invention of Beasely, AAPA, and Rothenberg, there being a first and second deciphering unit is obvious.

Applicant's arguments with respect to claims 3, 9, and 21-24 were fully considered and were found persuasive.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 7-8, 13-20, and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beasley et al (US 5,721,842) in view of applicant's admittance of prior art (herein referred to as AAPA) and further in view of Rothenberg (US 5,432,850).

Claims 1 and 7:

As per claim 1, Beasley discloses:

1. A connecting unit (Fig 1, item 60) that connects each terminal to a corresponding first computer, and switches a connection destination of the terminal to the at

least one first computer or the shared computer when a connection switching

request transmitted from the at least one terminal has been received (col 2, lines

56-64 and col 7, lines 49-53). *Note that each of the computers 52-56 in Figure 1*

are accessible by any one of the terminals/workstations seen on the left side of

Figure 1 that are connected to pods 70. Since any terminal seen on the left side

of Figure 1 can connect to any computer on the right side of Figure 1 (computers

52-56), any one computer on the right side can all be considered the shared

computer. Any computer on the right side of Figure 1 not considered the recited

shared computer can be considered the recited first computer.

2. A security unit (Fig 2, CPU 80) that executes for each terminal, identification

   processing of data that has been received from any one terminal and output to

   the at least first computer or the shared computer, the identification processing

   including utilizing an identifier (i.e. switch card's address) corresponding to a

   connector (i.e. Fig 7, switch card) through which the at least one terminal is

   connected (col 6, lines 42-54; Fig 2B, item 122; and Fig 7). *CPU 80 is disclosed*

   as performing processing of data received from the keyboard, mouse, or monitor

   to form a packet as seen in Figure 2B for output to the destination computer, i.e.

   the first computer or the shared computer. Byte 122 seen in Figure 2B indicates

   an address of the sending card, i.e. an identifier corresponding to a connector

   through which the at least one terminal is connected, is used in the processing of

   data.

The differences between applicant's claimed invention and Beasley's invention are that Beasley does not explicitly disclose:

1. The first computer/at least one first computer is a private computer/at least one private computer corresponding to the at least one terminal.

2. The connection unit connects in a default position each terminal to a corresponding private computer.

3. The identification processing enciphering a received key code via use of the identifier as an encryption key.

However, AAPA discloses of a conventional, i.e. standard prior art, system and method where a private computer which corresponds to at least one terminal and a shared network computer is prepared for each user, where switch controls are used to switch between the user's use of the private computer and the shared network computer (specification: page 2, line 20-page 3, line 5). In light of this, at the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to modify Beasley's switching invention such that each terminal had a corresponding (at least one) private computer and the switching invention allowed a user to switch between use of the terminals private computer and the shared network computer. One skilled would have been motivated modify Beasley's invention in the manner discussed because as discussed by AAPA, use of private computer and a shared computer would allow the user to differentiate the use of the computers according to the contents of the work and the importance of the work (page 2, lines 10-

12) while use of a switching device to allow a user to switch between use of the private computer and the shared computer would allow the user to work more efficiently since the user did not have to move between computers (p2, lines 20-21).

AAPA also does not explicitly disclose that the connecting unit connects in a default position each terminal to a corresponding private computer. However, from the above cited portion of AAPA, it should be obvious to a person of ordinary skill in the art that in previously known switching systems, the user's terminal can connect to either the terminal's corresponding (at least one) private computer or to the shared computer. A person of ordinary skill in the art familiar with KVM switches as taught by Beasley would recognize that KVM switches by default connects a terminal to a computer located on the other end of the switch. From these teachings, it would be obvious to one of ordinary skill that when connecting an invention formed from the combination teachings of Beasley and AAPA, a terminal by default would be connected to either the private computer or the shared computer. Because there is only a finite combination of what the terminal could be connected to by default, it would have been obvious to one of ordinary skill in the art to further modify Beasely and AAPA's invention such that the connecting unit connects in a default position each terminal to a corresponding private computer. The rationale for this is that given a finite number of ways that a terminal could be connected by default, it would have been obvious to one of ordinary skill in the art to try different default connection schemes to find a setting that is most convenient and popular for end users. Having the default connection position of a switch connect each terminal to each corresponding private computer would make more sense than

connecting every terminal to the shared computer since it would be inconvenient for every user to try to use the same computer at the same time.

As per the limitation of the identification processing enciphering a received key code via use of the identifier as an encryption key, it is made obvious by Rothenberg's teachings. Rothenberg discloses identification processing wherein a data frame to be sent from a source address to a destination address is enciphered via use of an identifier, i.e. address, corresponding to a source, i.e. connector through which a terminal is connected, as an encryption key (col 3, lines 37-57). Note that while Rothenberg does disclose that the network wherein his teachings are used could be an Ethernet network, which would mean that the identifier would most likely be an IP address, one skilled would recognize that Rothenberg's teachings could be applied to other types of networks and using other types of identifiers/addresses. It would have been obvious to one of ordinary skill in the art to modify Beasley and AAPA's combination invention such that it performed identification processing by enciphering a received key code via use of identifier (i.e. the switch card address) as an encryption key. One skilled would have been motivated to incorporate Rothenberg's teachings because it would ensure secure delivery of information sent from a source to a destination (col 1, lines 28-30). Note that secure delivery of information during transmittal was a problem in the art that was well known to one of ordinary skill in the art.

Claims 7 is directed towards a method performed using the switching device of claim 1 and is rejected for much the same reasons as claim 1.

Claims 2 and 8:

The limitations further recited in claims 2 and 8 are obvious to the combination invention of Beasley, AAPA, and Rothenberg.

Rothenberg discloses an enciphering unit, i.e. encryptor, that executes an enciphering processing local to each terminal of data transmitted from a source address to a destination address (col 3, lines 33-57 and Fig 3). Recall that in Beasley's modified invention, data is sent from a terminal to the switching device, which then forwards the data to either the private computer the shared computer. As such, the enciphering unit as taught by Rothenberg within the context of the combination invention of Beasley, AAPA, and Rothenberg enciphers data that has been transmitted from any one terminal and received by the switching device.

Rothenberg further discloses a deciphering unit, i.e. decryptor, that executes a deciphering processing corresponding to the enciphering processing local to the at least one terminal... (col 3, lines 33-36 and Fig 4). Note in Figure 1 of Rothenberg that each computer 14 has its own encryptor/decryptor 14. In the context of the combination invention of Beasley, AAPA, and Rothenberg, it would make obvious to one of ordinary skill in the art that each terminal would have its own local enciphering unit and each destination (the private computer or the shared computer) would have its own deciphering unit that executes a deciphering process corresponding to the enciphering process locate to the at least one terminal connected to it, of the data that has been output from the switching device to the destination. Since the destination consist of at least one private computer and the shared computer, this would make obvious that

there would be a first deciphering unit that does deciphering for each of the private

computer and a second deciphering unit for the shared computer. As such, the

limitations further recited in claims 2 and 8 are obvious to the teachings of Beasley,

AAPA, and Rothenberg.

Claim 13:

Beasley discloses at least one first computer (Fig 1, item 52); at least one

terminal corresponding to the at least one first computer (Fig 1, item 62); at least one

shared computer connected to a network (Fig 1, item 54); and a switching device (Fig 1,

item 60). The switching device as recited in claim 13 has limitations as recited for the

switching device of claim 1. The rejection of the limitations of the switching device

recited in claim 13 can be found in the rejection of claim 1. Note that in Figure 1 of

Beasley, one can see that the switching device 60 is disposed between at least one first

computer and the terminal, for relaying data between the terminal and the at least one

shared computer.

Beasley does not disclose the at least one first computer being a private

computer. However, as discussed in the rejection of claim 1, private computers

corresponding to a terminal were well known in the art at the time applicant's invention

was made as admitted by applicant, thus the limitation is obvious to the combination

invention of Beasley, AAPA, and Rothenberg.

Claim 17:

As per claim 17, the limitations recited therein are a combination of the limitations

recited in claims 13 and 2, which were discussed as being obvious to the combination

invention of Beasley, AAPA, and Rothenberg.

Claims 14 and 18:

Beasley does not explicitly disclose wherein at least one shared computer is

connected to a second network independent of said network. However, the examiner

take official notice that computer systems and networks wherein at least one computer

(shared or private) that is connected to a further/second network independent of said

network have existed before the time applicant's invention was made. One of ordinary

skill in the art would be motivated to connect a shared computer to a further

independent network as this would allow more access of information for the users

Beasley's invention.

Claim 15 and 19:

Beasley does not explicitly disclose wherein the network is the Internet.

However, the examiner take official notice that a network being the Internet, which is

connected to a computer of any sort has been known to exist before the time applicant's

invention was made. One of ordinary skill in the art would be motivated to connect a

shared computer to a further independent network where the network is the Internet

because it would allow users of Beasley's invention to have access to one of the largest

source of information on the planet.

Claim 16 and 20:

Beasley does not explicitly disclose wherein the second network is an intranet.

However, the examiner takes official notice that a further/second network being an

intranet has existed before the time applicant's invention was made. One of ordinary

skill in the art would be motivated to connect a shared computer to a further

independent network as this would allow more access of information for the users of the

Beasley's invention. Some of the information may be obtained only by being connected

to an intranet, which contains restricted information.

Claim 37:

Claim 37 recites limitations substantially similar to what is found recited in claim 1

and is rejected for much the same reasons. Note that the identification processing unit

recited in claim 37 corresponds to the security unit recited in claim 1.

Claim 38:

As per claim 38, Beasley discloses:

1. A connecting unit (Fig 1, item 60) connecting a terminal of a plurality of terminals
   (Fig 1, workstations 63-66) to a one of a plurality of first computer (Fig 1,
   computers A-C) and at any instance only one of the terminals may be connected
   to the network computer (Fig 1). *Note that switch 60 shows that at any instance*
   in time, only one terminal may be connected to any one shared, i.e. networked,
   computer at a time.

2. An identification processing unit (Fig 1, pod 70 or Fig 2, CPU 80) coupled to the

   connection unit (Fig 1) utilizing an identifier corresponding to a connector through

   which the terminal is connected (col 6, lines 42-54).

Beasley does not explicitly disclose each of the plurality of first computers are

private computers. Beasley does not explicitly disclose each of the plurality of terminals

connects in a default position to only one corresponding private computer of the plurality

of private computers or a network computer.

However, AAPA discloses that computers being private computers was well

known in the art at the time applicant's invention was made (p2, lines 2-31). AAPA

discloses that it was conventional, i.e. standard, in the art of switching to prepare a

private computer and a network computer for each use such that each user could switch

between the private computer and the network computer (p2, lines 2-31). In light of this,

it would have been obvious to one of ordinary skill in the art to modify Beasley's

invention such each of the plurality of terminals seen in Figure 1 had a corresponding

private computer to which only the corresponding private computer can connect and a

network computer to which only one terminal can connect at any instance in time. One

skilled would have been motivated to do so because AAPA discloses that it was

conventional/standard for each user to have their own private computer and to be able

to switch to a network computer as needed so as to differentiate between uses of the

computers according to the content of the work (p2, lines 2-31). One skilled would have

been motivated to have only one user be able to connect to the network computer at a

time because if resources were shared between multiple users at the same time, the users would be working less efficiently than if he/she had exclusive access.

As per the limitation that each terminal of the plurality of terminals connects in a default position to only one corresponding private computer of the plurality of private computers, as discussed in claim 1, based on the teachings of Beasley and AAPA, it would have been obvious to one of ordinary skill in the art to have each terminal connect in a default position to a corresponding private computer because in the combination invention of Beasley and AAPA, each terminal could only be connected to either the corresponding private computer or the shared/network computer by default. It would have been obvious to one of ordinary skill in the art to try different default settings for the combination switching device of Beasley and AAPA to find one which would best fit an end user's preferences and needs, thus it would have been obvious to one of ordinary skill in the art to have each terminal of the plurality of terminals connect in a default position to only one corresponding private computer of the plurality of private computers or a network computer.

Beasley also does not disclose the identification processing unit enciphering a received key code via use of the identifier as an encryption key. However, as discussed in the rejection of claim 1, this limitation was disclosed by Rothenberg. At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to further modify Beasley's invention according to the limitations recited in claim 38. One skilled would have been motivated to incorporate Rothenberg's teachings within Beasley's for the same reasons given in claim 1.

Claims 4, 10, and 25-28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Beasley et al (US 5,721,842) in view of applicant's admittance of

prior art (herein referred to as AAPA) and further in view of Rothenberg (US 5,432,850)

and further in view of Wilder et al (US 6,557,170).

Claims 4 and 10:

Beasley further discloses a switching unit that cancels a connection of the

terminal when the terminal has been connected to the shared computer; switches the

connection to first computer corresponding to the terminal, that cancels a connection of

the terminal when the terminal has been connected to the first computer corresponding

to the terminal (Fig 1, item 60 and col 10, lines 42-49). Note that the first computer

being a private computer is obvious to the combination of Beasley, AAPA, and

Rothenberg, as previously discussed.

Beasley does not explicitly disclose a detecting unit that detects whether or not a

key code of a predetermined key transmitted from any terminal has been received in a

predetermined number during a predetermined period of time. However, this limitation

reads on the use of hot keys. Hot keys are keys codes or combination of key codes that

are detected in a predetermined number during a predetermined period of time and if

detected, causes a predetermined action to occur. Wilder discloses this limitation (col 2, lines 19-49; col 5, lines 54-64; and col 6, lines 28-35).

At the time applicant's invention was made, it would have been obvious to one skilled in the art to further modify Beasley's invention according to the above limitations by incorporating use of hot keys. One skilled would have been motivated to do so because hot keys would allow a user to have short cuts in causing certain actions to occur with Beasley's switching device, which is convenient for the user.

Beasley also does not explicitly disclose the switching unit disregarding the connection switching request when a terminal other than a corresponding terminal has already been connected to the shared computer, at a time when the detecting unit has performed detecting. However, it was well known in the art to disregard a request to a connect to a device when the device is already busy or in use. At the time applicant's invention was made, it would have been obvious to further modify Beasley's invention such that it disregarded connection switching requests when a terminal other than the corresponding terminal has already been connected to the shared computer, at a time when the detecting unit has performed detecting. One skilled would have been motivated to do so because it would ensure that only one person at a time is using a computer, which would enable a computer to function more efficiently since it does not have to share resources among multiple users.

Claim 25:

As per claim 25, the limitations recited therein are a combination of what is recited in claims 13, 1, and 4. Claim 25 is rejected for the same reasons given in claims 13, 1, and 4.

Claims 26-28:

Claims 26-28 recite limitations similar to what is recited in claims 14-16 respectively and are rejected for the same reasons.

Claims 5-6, 11-12, and 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beasley et al (US 5,721,842) in view of applicant's admittance of prior art (herein referred to as AAPA) and further in view of Rothenberg (US 5,432,850) and further in view of Onsen (US 6,473,811).

Claims 5 and 11:

Beasley does not explicitly disclose a posing unit that posts a connection status of the shared computer to each terminal. However, Onsen discloses this limitation (col 1, lines 29-39). At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to further modify Beasley's invention according to the limitations recite din claims 5 and 11. One skilled would have been motivated to do so because incorporating a posting unit which displays a connection status into a switching device would allow users to see if the computer is already being used and thus the users would know not to waste time trying to connect to a busy computer.

Claims 6 and 12:

Onsen further discloses the posting unit posts to each terminal that the shared computer is currently being used, when the shared computer is currently being used (col 1, lines 29-39).

Claim 29:

As per claim 29, the limitations recited therein are similar to what is recited in claims 13, 1, and 5. Claim 29 is rejected for the same reasons given in claims 13, 1, and 5.

Claims 30-32:

Claims 30-32 recite limitations similar to what is recited in claims 14-16 respectively and are rejected for the same reasons.

Claim 33:

As per claim 33, the limitations recited therein are similar to what is recited in claims 13, 1, and 6. Claim 33 is rejected for the same reasons given in claims 13, 1, and 6.

Claims 34-36:

Claims 34-36 recite limitations similar to what is recited in claims 14-16 respectively and are rejected for the same reasons.

Allowable Subject Matter

Claims 3, 9, and 21-24 would be allowable if rewritten or amended to overcome objections set forth in this Office action.

Claim 3 is allowed over the prior art because applicant's arguments submitted on 8/21/07 with respect to claim 3 were persuasive. Rothenberg uses a long address such as an IP address as an encryption key. Upon further consideration of Beasley, AAPA, and Rothenberg in light of applicant's remarks, the examiner agrees that it would not have been obvious to one of ordinary skill in the art to bit shift to encrypt and decrypt by using long addresses as taught by Rothenberg as cryptographic keys since doing so would be very inefficient. Beasley is silent as to what format the address of his switching cards may have, thus the additional teachings of Beasley also would not lead one of ordinary skill in the art to bit shift for enciphering/deciphering by using the card's address/identifier as a cryptographic key to determine how much to bit shift. AAPA's teachings would also not lead one to the limitations recited in claim 3. Claims 9 and 21 are allowable for the same reasons as claim 3. Claims 22-24 are allowable due to dependency on claim 21.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ponnoreay Pich whose telephone number is 571-272-7962. The examiner can normally be reached on 9:00am-4:30pm Mon-Thurs.
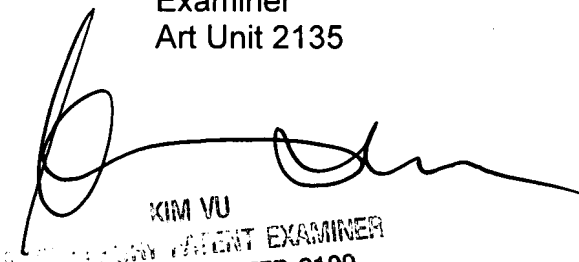
If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

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Ponnoreay Pich
Examiner
Art Unit 2135

PP

KIM VU
PATENT EXAMINER
TECHNOLOGY CENTER 2100